10/11/63

RURAL AREAS DEVELOPMENT -- AGRICULTURAL RESEARCH SERVICE ASSISTANCE IN ESTABLISHMENT OF AGRICULTURAL PROCESSING INDUSTRIES 1/

The Department's program for developing new products and uses for farm commodities is conducted by the Utilization Research and Development group (UR&D) of the Agricultural Research Service. Through chemical, engineering, and other scientific research, UR&D seeks to enhance the use-value and competitive position of American farm products, thus benefiting the farmer, aiding industry, and providing consumers with better products. 2/

The purpose of this presentation is to give technical and economic information about products made from agricultural materials, developed or improved by Utilization Research and Development and which has been successfully applied in other communities, that may be of possible interest to the Rural Areas Development program.

It is emphasized that this discussion is for information purposes -- not advocacy -- so that local, State, and other interested people can consider the various possibilities of converting agricultural materials into profitable items of commerce as a means of increasing income and employment for a particular area.

1/ Presented at TAP meeting, Athens, Georgia, October 21, 1963, by Dr. Jackson E. Simpson, RAD, ARS, USDA.

2/ See Appendix "A" for additional information concerning the USDA Utilization Research and Development Program.

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Nearly 50 products and processes utilizing agricultural materials have been selected for this first presentation (see Appendix B). Although this list by no means includes all the possible processing opportunities, they are illustrative of the range of commodities and activities in which UR&D is in a position to give assistance in the RAD program. For convenience, these presentations are grouped according to the six categories commonly used for UR&D program planning and reporting -- the order is not related to priority of interest, need, or monetary value.

For each product and process, a descriptive statement is given later in this paper concerning manufacturing procedure, value and applications to rural areas, raw materials, and facilities and costs. It is hoped this brief information will be useful to guide community leaders in selecting or suggesting products and processes for further consideration.

For any product or process that appears to be of real interest to a particular community, a detailed study should be made to develop information necessary to all phases of the operation -- markets, raw materials, plant site, type of building, equipment and facilities needed, personnel requirements, operational costs, fixed and operating capital, and many other factors -- before making final decisions. Developing such detailed information is not an easy task, but, if properly done, will save time and dollars, and may prevent the disappointment of attempting an enterprise unsuited for the area. Some guidelines pertinent to putting together a set of sound plans are outlined in Appendix C.

UR&D representatives will be glad to consult with and assist RAD groups or community leaders at all times in considering the possibilities of an agricultural processing plant for that region. 3/ This assistance is not limited to products and processes developed by the UR&D laboratories, but includes any type of related operation with which the UR&D staff may be familiar. Also, there is a wide range of other information pertinent to processing agricultural materials -- such as economic data and marketing knowledge -- available in the Department.

3/ The focal point for seeking UR&D assistance is through Dr. M. R. Clarkson, Associate Administrator, Agricultural Research Service, USDA, Washington, D. C.

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APPENDIX A
Background Information Concerning USDA Utilization Research and Development Program

Accomplishments --

In its first two decades of operation, USDA Utilization Research and Development added over $2.5 billion of value to farm commodities at a cost of less than $200 million -- representing a benefit-to-cost ratio of $15 to $1. This continuing program of fundamental research and applied technology results in spiraling advantages, with each succeeding year giving more return per year for each dollar of expenditure. For example, in recent years this program has enriched the nation by approximately $25 for each $1 spent.

The commercial adoption of innumerable products and processes emanating from UR&D efforts has put thousands of people to work -- directly in processing operations and indirectly in the growing, storage, and distribution aspects -- and helped stabilize many faltering farm commodities. One of the earliest examples is the frozen orange juice concentrate, developed in cooperation with the Florida Citrus Commission, which stabilized the Florida citrus industry and today has a cumulative value of $3 billion. It is the basic development for the entire citrus industry.

Organization --

Utilization Research and Development (UR&D) is a part of the Agricultural Research Service. Although utilization research has been done in one form or another almost since the Department's establishment over a hundred years ago, the utilization research program was first formalized under the Agricultural Adjustment Act of 1938 which authorized the establishment of four regional utilization laboratories. In 1963, UR&D was combined with Nutrition and Consumer Use Research; this new group is now known as Nutrition, Consumer and Industrial Use Research of the Agricultural Research Service. (SLIDE 1)

Objectives --

The UR&D program seeks, through systematic chemical and other scientific research, to create new and improved uses for agricultural commodities. By this means, utilization research strives to maintain traditional outlets and to develop new products and processes utilizing the products of American farms, particularly those in surplus. There is increasing emphasis on developing large-volume industrial uses for agricultural materials. These new and improved products -- extending across the entire horizon of food, feed, and industrial uses -- are developed to meet specific needs of domestic markets and of foreign consumers. Utilization research contributes to increasing farm income, to the establishment of rural industries, and to the variety and utility of products available to the consumer.

Operation --

USDA's utilization research is conducted in four regional laboratories (Albany, California; New Orleans, Louisiana; Peoria, Illinois; and Wyndmoor, Pennsylvania) and in ten related field laboratories (Prosser and Puyallup, Washington; Pasadena, California; Weslaco, Texas; Houma, Louisiana; Winter Haven and Olustee, Florida; Raleigh, North Carolina; Beltsville, Maryland; and Washington, D.C.). (SLIDES 2, 3, 4, and 5)

These utilization laboratories are operated in close association with State Experiment Stations, colleges and universities, manufacturers, and other agricultural groups. Cooperative work is achieved in various ways; some is under contract. (SLIDES 6, 7, 8, 9, 10 and 11)

Availability of Research Information --

Scientific knowledge and technologic advances developed by the USDA Utilization Research and Development program are made available for public use as rapidly as practicable. About 10,000 publications and more than 1,000 public-use patents have resulted from this work. The following statistics for F.Y. 1962 illustrate typical ways in which this information is disseminated for the public benefit: (SLIDE 12)

84 patents obtained

649 research papers published

685 speeches, press releases, and appearances on radio and television

63 formal conferences with industry

41 public-service exhibits

5,500 technical visitors to UR&D laboratories

Current Program --

Present principal utilization research areas -- including both domestic and foreign laboratories -- are as follows:

(SLIDES 13, 14, 15, 16, 17 and 18)

Cereal Grains and Forages -- Major part of the research is devoted to corn and wheat, plus continuing investigations on rice, barley, oats, sorghum, and alfalfa and other forages.

Cotton and Wool -- Chemical, physical, and mechanical processing research on cotton and wool, and supporting fundamental and exploratory studies of their fiber properties and their modification.

Fruits, Vegetables, and Tree Nuts -- Research to develop fruit and vegetable products that are attractive, economical, nutritive and meet the increasing demand for convenience-in-use, and to develop processes and equipment for manufacture of these products. Processes developed for stabilizing shelled tree nuts to extend shelf-life and usefulness.

Oilseeds -- Research primarily on soybean, cottonseed, and linseed oils, meals, and related products; investigations also include castor, tung, and selected oilseeds resulting from the new crops screening program. Research stresses new and broadened industrial uses, and seeks to improve food and feed uses.

New and Special Plants -- Investigations directed to develop compositional data on plants from world-wide sources in an effort to find alternate crops to fill needs not now met by domestic sources, and to develop new and more economic uses for domestic special plants.

Poultry, Dairy and Animal Products -- Development of better and more economic food products from milk, poultry, eggs, and meat, and development of new industrial outlets for fats, hides, and other animal byproducts.

Financial Information --

Funds available, excluding $637,700 for estimated pay costs pursuant to P.L. 87-793, for F.Y. 1963 approximated: (SLIDE 19)

Cereal and forage crops	$ 5,231,000
Cotton, Wool and other fibers	4,941,000
Fruits, vegetables, & tree nuts . . .	3,557,000
Oilseeds	2,815,000
New & Special Plants	1,944,000
Poultry, Dairy, Animal Products . . .	5,280,000
TOTAL	$23,768,000

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APPENDIX B

UR&D Products and Processes for RAD Consideration

Cereals and Forages

1. Processed feeds
2. Wheat and rice "convenience" foods
3. Frozen bakery products
4. Improved rice drying
5. Useful products from corncobs

Cotton and Wool

1. Flame retardant cotton outer garments and household cotton products
2. Weather resistant (outdoor-use) cotton products
3. Stretch and bulky cotton products
4. Wash-wear cotton products
5. Cotton opener-cleaner (equipment)
6. Cotton opener-blender (equipment)
7. Loom device for weaving water- and weather-resistant cotton fabrics (equipment)
8. Easy-care woolen products
9. Permanent creases for wool products

Fruits, Vegetables, and Tree Nuts

1. Pre-peeled potatoes
2. Stabilized shelled tree nuts
3. Sweetpotato flakes
4. Dehydrofrozen fruits and vegetables
5. Belt-trough drier (equipment)
6. Cucumber pickle products
7. Peach products
8. Full-flavor fruit juice concentrates (includes 7-fold apple juice and others)
9. Country cider
10. Dehydrated fruit and vegetable powders
11. New dry bean "instant" products
12. High-moisture dried fruits
13. Dehydrated fruit and vegetable products (piece)
14. Industrial uses for nutshells and fruit pits

Oilseeds

1. Vegetable oilseed "foots" for processed feeds
2. Improved color of cottonseed oil
3. Tung oil products
4. Fermented soybean food products
5. Soybean flour for food uses
6. Foamed plastics for insulation and building uses

New and Special Plants

1. Maple sirup and products
2. Naval stores products (paper size, etc.)
3. Products made of sugarcane bagasse
4. * Feed meal from mustard seed

Poultry, Dairy, and Animal Products

1. Dehydrated egg products
2. Improved frozen poultry products
3. Leather products (glutaraldehyde tannage)
4. * Animal fats in feed products
5. * Feathers converted to profitable uses
6. * Yeast from cheese whey
7. * Dried cottage cheese whey

Miscellaneous

1. Frozen pre-cooked food products
2. Emergency foods for civilian defense use (Bulgur wheat wafers, etc.)

*See "Processed Feeds"